Applicants	Wu et al.	**COMMUNICATION REGARDING CERTIFICATE OF CORRECTION**
Patent No.	6,741,764	
Issue Date	5/25/2004	
Serial No.	10/010,815	
Attorney Docket No.	100.709US01	
Title: POLARIZATION BEAM SEPARATOR AND COMBINER		

ATTN: Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicants hereby requests issuance of a Certificate of Correction in U.S. Letters Patent No. 6,741,764 as specified on the attached Certificate (Form PTO/SB/44). Please find enclosed documentation supporting errors identified in the above noted patent, referred to herein as Exhibits A and B.

With respect to the errors identified in claim 4 of the issued patent, Exhibit A is a copy of pages 1 and 3 of an Amendment and Response including claim 4 (renumbered by the Office; originally filed as claim 28), with a signed certificate under 37 C.F.R 1.8 indicating deposit with the United States Postal Service on August 25, 2003. Exhibit B is a copy of Col. 14 of the issued patent. The identified error constitutes a typographical error, and, as such, does not introduce new matter.

Applicants believe these corrections as specified are due to an Office error and therefore does not believe that any fee is due for issuance of a Certificate of Correction. However, if deemed necessary, the Office is authorized to charge any additional fees found due to Deposit Account No. 502432. Please contact the undersigned if there are any further questions.

Respectfully submitted,

Date: September 11, 2007

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Light propagating along the free space optical paths **865**, **870** is redirected towards the birefringent beam separator **840** by the faceted reflector **875** that may have an axis of symmetry **878**. Light propagating to the right along the optical path **870** is redirected to the left along optical path **882** and light propagating to the right along the optical path **865** is redirected to the left along the optical path **880**. The faceted reflector is typically positioned to symmetrically dispose the beam path **870** and the beam path **882** on opposite sides of the symmetry axis **878** and to symmetrically dispose the beam path **865** and the beam path **880** on opposite sides of the symmetry axis **878**.

The birefringent beam separator extraordinary polarization optical path **885** couples the free space path **880** to the free space **830** and the ordinary polarization optical path **887** couples the free space path **882** to the free space path **825**. The optical coupling module couples the free space paths **825**, **830** and the optical fibers **810**, **815** in such a way the that light polarized in a first direction and propagating to the left along the optical path **830** is transported from the polarization separator **800** by the optical fiber **810** and orthogonally-polarized light propagating along the free space path **835** is transported from the polarization separator **800** by the optical fiber **805**.

The fiber optic polarization separator **800** may be operated as a fiber optic polarization combiner by reversing the direction of light propagation. Orthogonally-polarized beams propagating towards the coupling module **820** along the optical fibers **805**, **810** may be combined by the polarization separator **800** into a beam with combined polarization states propagating away from the optical coupler **820** on the optical fiber **815**. Simultaneous combining and separating operation may also be possible with counterpropagating beams.

A faceted reflector may alternatively be an asymmetric assembly that is formed, for example, from two right angle prisms **905**, **910**. The faceted reflector assembly **900** that is illustrated in FIG. **9**, for example comprises two right angle prisms that are optically coupled along the plane **910**. Light propagating towards the prism **905** along the input free space optical path **915** is coupled by the path **925** to light propagating away from the prism **910** along the output free space optical path **940**. Light propagating towards the prism **905** along the input optical path **920** is similarly coupled to the light propagating away from the prism **910** along the optical path **935** by the optical path **930**. While the faceted reflector lacks a symmetry axis, the beam paths are symmetric with respect to the axis **950**. For example, the beam paths **915** and **940** are symmetrically disposed on either side of the axis **950** and the beam paths **920** and **935** are symmetrically disposed on either side of the axis **950**. The separation between symmetrically disposed beam paths may be adjusted by changing the displacement, k, between the prism surfaces.

The present invention should not be considered limited to the particular examples described above, but rather should be understood to cover all aspects of the invention as fairly set out in the attached claims. Various modifications, equivalent processes, as well as numerous structures to which the present invention may be applicable will be readily apparent to those of skill in the art to which the present invention is directed upon review of the present specification. The claims are intended to cover such modifications and devices.

We claim:

1. An optical device, comprising:

a first waveguide;

a second waveguide coupled to the first waveguide via a first bi-directional, polarization dependent path;

a third waveguide coupled to the first waveguide via a second bi-directional, polarization dependent path;

a single Wollaston prism disposed on the first and second bi-directional, polarization dependent paths, the first and second bi-directional, polarization dependent paths overlapping between the first waveguide and the Wollaston prism; and

a first converging optical subsystem disposed to couple light between the second waveguide and the Wollaston prism and between the third waveguide and the Wollaston prism, the first converging optical subsystem including at least one focusing element common to the first and the second bi-directional, polarization dependent paths, the first and second paths being substantially collimated between the Wollaston prism and the first converging optical subsystem.

2. The optical device as recited in claim **1**, wherein the first converging optical subsystem includes a lens.

3. The optical device as recited in claim **1**, further comprising a second converging optical subsystem coupling light between the first waveguide and the Wollaston prism.

4. The optical device as recited in claim **1**, wherein the first and second converging optical subsystems have a common focal distance, f, and the first waveguide is separated by approximately the focal distance, f, from the second optical subsystem, the first optical subsystem is separated approximately the focal distance, f, from the Wollaston prism, and the first optical subsystem is separated approximately the focal distance, f, from at least the second waveguide.

5. The optical device as recited in claim **1** wherein light propagating in the second waveguide is polarized.

6. The optical device as recited in claim **1**, wherein light propagates along the first bi-directional, polarization dependent path from the first waveguide to the second waveguide.

7. The optical device as recited in claim **1**, wherein light propagates along the first bi-directional, polarization dependent path from the second waveguide to the first waveguide.

8. The optical device as recited in claim **1**, wherein the Wollaston prism is formed from a crystalline material selected from the group of yttrium ortho-vanadate (YVO_4), lithium niobate ($LiNbO_3$), α-BBO (BaB_2O_4), TeO_2, and rutile (TiO_2).

9. The optical device as recited in claim **1**, wherein the first converging optical subsystem has first focal length and the second and third waveguides are positioned from one side of the first converging optical subsystem by a distance approximately equal to the first focal length.

10. The optical device as recited in claim **9**, wherein the Wollaston prism is positioned at a distance from the first converging optical subsytem by a distance approximately equal to the first focal length.

11. The optical device as recited in claim **3**, wherein the second converging optical subsystem has a second focal length, and the first waveguide is positioned from the second converging optical subsystem by a distance approximately equal to the second focal length.

12. The optical device as recited in claim **11**, wherein the Wollaston prism is positioned at a distance from the second converging optical subsytem by a distance approximately equal to the second focal length.

13. A method of coupling light between a first waveguide and second and third waveguides, comprising:

propagating the light along bi-directional, polarization-dependent free-space paths including propagating

Serial No. 10/010815 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	P. WU et al.	Examiner:	Therese Barber
Serial No.:	10/010815	Group Art Unit:	2882
Filed:	November 13, 2001	Docket No.:	00980.1078-US-01
Title:	POLARIZATION BEAM SEPARATOR AND COMBINER		

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described herein, are being deposited in the United States Postal Service, as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, Alexandria, VA 22313-1450 on August 25, 2003.

Iain A. McIntyre
Name

Signature

AMENDMENT AND RESPONSE UNDER 37 C.F.R. §1.111

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This paper is submitted in response to the Office Action dated May 23, 2003, setting a three month shortened statutory period for response. Since August 23, 2003 fell on a Saturday, this response is timely filed within three months of the Office Action.

IN THE CLAIMS

Kindly change the claims as shown below.

1-24 (canceled)

25. (Currently amended) An optical device, comprising:

a first waveguide;

a second waveguide coupled to the first waveguide via a first bi-directional, polarization dependent path;

a third waveguide coupled to the first waveguide via a second bi-directional, polarization dependent path;

a single Wollaston prism disposed on the first and second bi-directional, polarization dependent paths, the first and second bi-directional, polarization dependent paths overlapping between the first waveguide and the Wollaston prism; and

a first converging optical subsystem disposed to couple light between the second waveguide and the Wollaston prism and between the third waveguide and the Wollaston prism, the first converging optical subsystem including at least one focusing element common to the first and the second bi-directional, polarization dependent paths, the first and second paths being substantially collimated between the Wollaston prism and the first converging optical subsystem.

26. (Original) The optical device as recited in Claim 25, wherein the first converging optical subsystem includes a lens.

27. (Original) The optical device as recited in Claim 25, further comprising a second converging optical subsystem coupling light between the first waveguide and the Wollaston prism.

28. (Original) The optical device as recited in Claim 27, wherein the first and second converging optical subsystems have a common focal distance, f, and the first